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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/631,996	07/31/2003	Joanna Aizenberg	5-2-15	2316

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Docket Administrator (Room 3J-219)  
Lucent Technologies Inc.  
101 Crawfords Corner Road  
Holmdel, NJ 07733-3030

EXAMINER

MARTINEZ, JOSEPH P

ART UNIT	PAPER NUMBER
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2873

DATE MAILED: 09/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/631,996

Applicant(s)

AIZENBERG ET AL. 

Examiner

Joseph P. Martinez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 6-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4 and 5 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☒ Claim(s) 1-18 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____.  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>7-31-03, 9-5-03, 9-10-03, 10-27-03</u>                                    | 6) <input type="checkbox"/> Other: ____.                                    |
| <u>11-21-03, 3-28-05 AND</u>   |   |

## **DETAILED ACTION**

### ***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-5, drawn to an array of micro-lenses on a substrate, classified in class 359, subclass 620.
- II. Claims 6-13, drawn to a method of fabricating a micro-lens array comprising forming a replica stamp, classified in class 264, subclass 2.5.
- III. Claims 14-18, drawn to a method of fabricating a micro-lens array comprising exposing a layer of photosensitive hydrogel, classified in class 430, subclass 321.

The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by another and materially different process, such as a process of directly patterning the micro-lens array from a photosensitive hydrogel starting material.

Inventions III and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process

(MPEP § 806.05(f)). In the instant case the product as claimed can be made by another and materially different process, such as a process of forming a replica stamp and pressing the replica stamp into a layer of liquid precursor for a hydrogel.

Inventions II and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different mode so operation. Specifically, the invention of group I operates by forming a replica stamp from a master pattern, and then pressing the replica stamp into a layer of liquid precursor for a hydrogel (i.e. stamping to form the micro-lens array), while the invention of group II operates by exposing a layer of photosensitive hydrogel starting medium, curing the layer, and washing the cured layer to remove uncrosslinked material (i.e. photolithographically patterning the micro-lens array).

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation between examiner John McPherson and attorney John F. McCabe on 8-8-05, a provisional election was made with traverse to prosecute the invention of group I, claims 1-5. Affirmation of this election must be made by applicant in replying to this Office action.

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Claim 6-18 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Claim Objections***

Claim 5 is objected to because of the following informalities: Claim 5 depends on withdrawn claim 6. Appropriate correction is required. For purposes of examination, the office interprets claim 5 to depend from claim 1.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wohlstadter (5986811).

Re claim 1, Wohlstadter teaches for example in fig. 4(a)-4(c), an apparatus, comprising: a planar substrate (54); and an array of substantially transparent spherical micro-lenses on the substrate (52), the micro-lenses forming a pattern, the pattern having an internal two-dimensional lattice symmetry on the planar substrate (col. 10, ln. 21-23); and wherein each micro-lens comprises one of a convex bulge in a surface of the planar substrate and concave depression in a surface of the planar substrate (col. 10, ln. 12-14) and wherein the micro-lenses comprise hydrogel (col. 2, ln. 55-63, wherein the office interprets the hydrophilic polymer to teach the claimed limitations) that swells and contracts (fig. 4(a)-4(c)) in a manner responsive to an environmental condition (col. 3, ln. 36-46).

But, Wohlstadter fails to explicitly teach the substrate is made of hydrogel.

However, Wohlstadter teaches for example, varying the chemistry of the substrate (54, col. 4, ln. 7-8) and the office interprets the use of the hydrophilic polymer to be included in the varied material.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Wohlstadter to include the substrate is made of hydrogel to improve cohesion, as taught by Wohlstadter (col. 4, ln. 5-8).

Re claim 2, Wohlstadter further teaches for example in fig. fig. 4(a)-4(c), each micro-lens has one spherical surface (top portion of 52) and one flat surface (back side

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of 54, wherein the office interprets 54 to be made of hydrogel), the flat surface being on the opposite side of the substrate as the spherical surface (back side of 54, wherein the office interprets 54 to be made of hydrogel).

Re claim 4, supra claim 1.

But, Wohlstadter fails to explicitly teach a center-to-center spacing between the micro-lenses of the array is less than about 500 microns.

However, Wohlstadter teaches for example, varying the size of the micro-lenses and the size of the array (col. 10, ln. 10-32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Wohlstadter to include a spacing of less than about 500 microns in order to accommodate different sizes of sensors.

Re claim 5, Wohlstadter further teaches for example in fig. 5, a spatially segmented light intensity detector (72, col. 5, ln. 61-63) positioned to intercept light spots produced by the micro-lenses; and a data processor (74) configured to receive intensity and position data from the light intensity detector.

***Allowable Subject Matter***

Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art taken alone or in combination fails to anticipate or fairly suggest the limitations of the claims, in such a manner that a rejection under 35 USC 102 or 103 would be proper. The prior art fails to teach a combination of all the claimed features as presented in dependent claim 3.

Specifically regarding claim 3, Wohlstadter teaches the state of the art of a tunable lens.

But, Wohlstadter fails to explicitly teach a combination of all the claimed features including a second planar substrate that is substantially transparent; and wherein the array is constrained to rest on the second substrate in a manner that enables the array to swell and contract, as claimed.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph P. Martinez whose telephone number is 571-272-2335. The examiner can normally be reached on M-F 7:00 AM to 3:30 PM.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JPM  
9-1-05



Hung Xuan Dang  
Primary Examiner